

U.S.C.G. Merchant Marine Exam
Master Uninspected Fishing Vessels
Q183 Navigation General - Oceans
(Sample Examination)

Choose the best answer to the following Multiple Choice Questions.

1. Which of the following is NOT a form of precipitation?

- (A) sleet
- (B) frost
- (C) rain
- (D) snow

If choice B is selected set score to 1.

2. Temperature and moisture characteristics are modified in a warm or cold air mass due to _____.

- (A) upper level atmospheric changes
- (B) the heterogeneous nature of the air mass
- (C) movement of the air mass
- (D) pressure changes in the air mass

If choice C is selected set score to 1.

3. A system of reservoirs and connecting tubes in a gyro compass is called a _____.

- (A) gyrotron
- (B) mercury ballistic
- (C) rotor
- (D) spider element

If choice B is selected set score to 1.

4. A buoy marking a wreck will show a(n) _____.

- (A) white light FL (2) and a topmark of 2 black spheres
- (B) yellow light and will be numbered
- (C) continuous quick white light and may be numbered
- (D) occulting green light and may be lettered

If choice A is selected set score to 1.

5. Under the IALA Buoyage System, which topmark shown in illustration D023NG below will be displayed on a safe water mark?

- (A) A
- (B) B
- (C) C
- (D) D

If choice A is selected set score to 1.

6. The directive force of a gyrocompass _____.

- (A) remains the same at all latitudes
- (B) increases with latitude, being maximum at the geographic poles
- (C) decreases with latitude, being maximum at the geographic equator
- (D) is greatest when a vessel is near the Earth's magnetic equator

If choice C is selected set score to 1.

7. Distance along a track line is measured on a Mercator chart by using the _____.

- (A) latitude scale at the mid-latitude of the chart
- (B) longitude scale near the middle of the track line
- (C) latitude scale near the middle of the track line
- (D) latitude or longitude scale at the middle of the scale

If choice C is selected set score to 1.

8. You are underway in a vessel with a draft of 6.0 feet. You are in an area where the charted depth of the water is 4 fathoms. You would expect the depth of water beneath your keel to be approximately _____.

- (A) 12 feet
- (B) 18 feet
- (C) 24 feet
- (D) 30 feet

If choice B is selected set score to 1.

9. With respect to failure warnings and status indications, GPS receivers should provide, at a minimum, _____.

- (A) a cross-track error alarm
- (B) an alarm if engine speed is suddenly reduced
- (C) a warning of loss of position
- (D) an indication of a change in satellite configuration

If choice C is selected set score to 1.

10. In the U.S. Aids to Navigation System, red and green horizontally-banded buoys mark _____.

- (A) general anchorage areas
- (B) fishing grounds
- (C) junctions or bifurcations
- (D) channels for shallow draft vessels

If choice C is selected set score to 1.

11. The radar control that shortens all echoes on the display and reduces clutter caused by rain or snow is the _____.

- (A) sensitivity time control (sea clutter control)
- (B) fast time constant (differentiator)
- (C) brilliance control
- (D) receiver gain control

If choice B is selected set score to 1.

12. Automatic identification systems (AIS) are expected to broadcast all of the following information EXCEPT _____.

- (A) navigation status
- (B) ship's heading
- (C) port of origin
- (D) time stamp

If choice C is selected set score to 1.

13. With respect to automatic identification systems (AIS), which information is required to be broadcast every 1 to 10 seconds?

- (A) Time stamp
- (B) Location of antenna
- (C) Destination
- (D) None of the above

If choice A is selected set score to 1.

14. Yesterday your chronometer read 02h 59m 58s at the 1500 GMT time tick. Today the chronometer reads 03h 00m 02s at the 1500 GMT time tick. What is the chronometer error?

- (A) 02s fast
- (B) -3s
- (C) 03h 00m 02s fast
- (D) +3s

If choice A is selected set score to 1.

15. The velocity of a rotary tidal current will be decreased when the Moon is _____.

- (A) full
- (B) new
- (C) at apogee
- (D) All of the above

If choice C is selected set score to 1.

16. Yesterday your chronometer read 03h 01m 56s at the 1500 GMT time tick. Today your chronometer read 03h 01m 58s at the 1500 GMT time tick. What is the chronometer error?

- (A) +2s
- (B) 03h 01m 58s fast
- (C) 01m 58s fast
- (D) -2s

If choice C is selected set score to 1.

17. While proceeding along the Norwegian coast on course 039°T, you sight the black-yellow-black banded buoy shown in illustration D021NG below, bearing 053°T. What action should you take?

- (A) Maintain course
- (B) Alter course to 053° and leave the buoy close aboard on either side
- (C) Alter course to port to rapidly open the bearing to the right
- (D) Alter course to 060° and ensure that the true bearings decreases

If choice D is selected set score to 1.

18. IN REGION A of the IALA Buoyage System, when entering from seaward, the starboard side of a channel would be marked by a _____.

- (A) red can buoy
- (B) red conical buoy
- (C) green conical buoy
- (D) green can buoy

If choice C is selected set score to 1.

19. A white buoy with an open-faced orange diamond on it indicates _____.

- (A) the buoy is a mooring buoy
- (B) operating restrictions are in effect
- (C) danger
- (D) vessels are excluded from the area

If choice C is selected set score to 1.

20. A special mark (yellow buoy), if lighted, may exhibit which light rhythm?

- (A) Morse "A"
- (B) Equal interval
- (C) Flashing
- (D) Occulting

If choice C is selected set score to 1.

21. Port side daymarks may be _____.

- (A) black and white
- (B) numbered
- (C) of any shape
- (D) octagonal

If choice B is selected set score to 1.

22. Which publication lists Class I and II private aids to navigation in or along navigable waters of the United States?

- (A) Light List
- (B) Sailing Directions
- (C) Aids to Navigation Manual
- (D) List of Private Aids

If choice A is selected set score to 1.

23. An occulting light is one in which _____.

- (A) the periods of light and darkness are equal
- (B) the period of light exceeds the period of darkness
- (C) the period of darkness exceeds the period of light
- (D) there is only a partial eclipse of the light

If choice B is selected set score to 1.

24. The angle that is measured westward from the first point of Aries to the hour circle of the body along the celestial equator is the _____.

- (A) azimuth angle
- (B) sidereal hour angle
- (C) Greenwich sidereal angle
- (D) local sidereal time

If choice B is selected set score to 1.

25. The Light List Does NOT contain information on _____.

- (A) radio beacon systems
- (B) radio direction finder calibration stations
- (C) aeronautical lights useful for marine navigation
- (D) the Global Positioning System (GPS)

If choice C is selected set score to 1.

26. Geographic range is the maximum distance at which a light may be seen under _____.

- (A) perfect visibility conditions, limited only by interference from background lighting
- (B) perfect visibility conditions, limited only by the curvature of the Earth
- (C) existing visibility conditions, limited only by the intensity of the light
- (D) existing visibility conditions, limited only by the curvature of the Earth

If choice B is selected set score to 1.

27. The buoy symbol printed on your chart is leaning to the northeast. This indicates _____.

- (A) nothing special for navigational purposes
- (B) you should stay to the north or east of the buoy
- (C) the buoy is a major lighted buoy
- (D) you should stay to the west or south of the buoy

If choice A is selected set score to 1.

28. When navigating in high latitudes and using a chart based on a Lambert conformal projection, _____.

- (A) a straight line drawn on the chart approximates a great circle
- (B) distance cannot be measured directly from the chart
- (C) the chart should not be used outside of the standard parallels
- (D) the course angle is measured at the mid-longitude of the track line

If choice A is selected set score to 1.

29. The planet Venus can be observed in the morning before sunrise if it is well to the _____.

- (A) east of and lower than the Sun
- (B) west of and higher than the Sun
- (C) west of and lower than the Sun
- (D) east of and higher than the Sun

If choice B is selected set score to 1.

30. With respect to the vernal equinox, what is the length of the year?

- (A) tropical year
- (B) anomalistic year
- (C) sidereal year
- (D) All of the above

If choice A is selected set score to 1.

31. At upper transit, if the zenith distance is 34° , the geographical distance from the observer to a body's GP is _____.

- (A) 510 miles
- (B) 1220 miles
- (C) 2040 miles
- (D) 2260 miles

If choice C is selected set score to 1.

32. Magnets in the binnacles of magnetic compasses are used to reduce the effect of _____.

- (A) local attraction
- (B) deviation
- (C) variation
- (D) All of the above

If choice B is selected set score to 1.

33. By convention, the Earth's south magnetic pole is colored _____.

- (A) red
- (B) blue
- (C) white
- (D) black

If choice A is selected set score to 1.

34. Given are the courses and speeds of 4 vessels. The navigator of which vessel would be required to know the actual time of meridian transit in order to take an accurate observation at LAN?

- (A) C 095°T , Sp 30 knots
- (B) C 268°T , Sp 22 knots
- (C) C 162°T , Sp 27 knots
- (D) C 356°T , Sp 5.5 knots

If choice C is selected set score to 1.

35. You are proceeding up a channel at night. It is marked by a range which bears $185^{\circ}T$. You steady up on a compass course of 180° with the range in line dead ahead. This indicates that you(r) _____.

- (A) are being affected by a southerly current
- (B) must come right to get on the range
- (C) course is in error
- (D) compass has some easterly error

If choice D is selected set score to 1.

36. Your dead reckoning position should be plotted _____.

- (A) at least every hour on the hour in the open waters of the sea
- (B) whenever an estimated position is plotted
- (C) when coming on or going off soundings
- (D) when it agrees with your GPS position

If choice A is selected set score to 1.

37. A great circle crosses the equator at $127^{\circ}W$. It will also cross the equator at what other longitude?

- (A) $27^{\circ}E$
- (B) $53^{\circ}E$
- (C) $27^{\circ}W$
- (D) $127^{\circ}E$

If choice B is selected set score to 1.

38. A line of position from a celestial observation is a segment of a _____.

- (A) parallel of declination
- (B) vertical circle
- (C) circle of equal altitude
- (D) parallel of altitude

If choice C is selected set score to 1.

39. The cold ocean current which meets the warm Gulf Stream between latitudes 40° and $43^{\circ}N$ to form the "cold wall" is called the _____.

- (A) North Atlantic Current
- (B) North Cape Current
- (C) Labrador Current
- (D) Greenland Current

If choice C is selected set score to 1.

40. The Brazil Current flows in which general direction?

- (A) Northwesterly
- (B) Southeasterly
- (C) Southwesterly
- (D) Northerly

If choice C is selected set score to 1.

41. The region containing 3/4 of the mass of the atmosphere and the region to which are confined such phenomena as clouds, storms, precipitation and changing weather conditions is called _____.

- (A) troposphere
- (B) stratosphere
- (C) stratopause
- (D) tropopause

If choice A is selected set score to 1.

42. A tsunami is caused by a(n) _____.

- (A) tidal wave
- (B) earthquake on the ocean's floor
- (C) storm surge caused by a hurricane or tropical storm
- (D) tornado

If choice B is selected set score to 1.

43. If the current and wind are in the same direction, the sea surface represents a wind speed _____.

- (A) higher than actually exists
- (B) that has no proportional relationship
- (C) that actually exists
- (D) lower than actually exists

If choice D is selected set score to 1.

44. You are underway on course 050°T and your maximum speed is 13 knots. The eye of a hurricane bears 100°T, 120 miles from your position. The hurricane is moving towards 275°T at 25 knots. What course should you steer at 13 knots to have the maximum CPA?

- (A) 339°
- (B) 320°
- (C) 326°
- (D) 333°

If choice D is selected set score to 1.

45. You are underway on course 120°T and can make 12 knots. The eye of a hurricane bears 150°T at 120 miles. The hurricane is on course 295° at 20 knots. What course should you steer at 12 knots to have the maximum CPA?

- (A) 330°
- (B) 348°
- (C) 312°
- (D) 001°

If choice B is selected set score to 1.

46. A sling psychrometer is used to measure _____.

- (A) barometric pressure
- (B) engine temperature
- (C) dry bulb and wet bulb temperatures
- (D) seawater temperature

If choice C is selected set score to 1.

47. In many areas "atoll" clouds (clouds of vertical development) are produced over small islands. These are the result of _____.

- (A) warm air from the sea rising over higher land areas
- (B) descending air over the islands
- (C) rising air currents produced by the warm islands
- (D) cool land air mixing with warm sea air

If choice C is selected set score to 1.

48. When compared to air temperature, which factor is most useful in predicting fog?

- (A) Absolute humidity
- (B) Dew point
- (C) Barometric pressure
- (D) Vapor pressure

If choice B is selected set score to 1.

49. An occluded front is caused by a(n) _____.

- (A) low pressure area
- (B) high pressure area
- (C) cold front overtaking a warm front
- (D) area of calm air

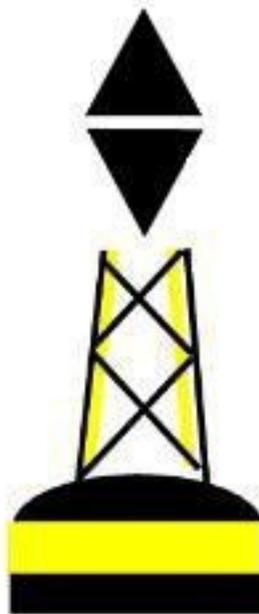
If choice C is selected set score to 1.

50. When reporting wind direction, you should give the direction in _____.

- (A) true degrees
- (B) isobaric degrees
- (C) magnetic compass degrees
- (D) relative degrees

If choice A is selected set score to 1.

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